

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior listing of claims in this application.

1. (Canceled).

2. (Previously presented) The method of claim 8 wherein the wet oxidation process is performed at a temperature in a range of about 450 °C to about 750 °C.

3. (Previously presented) The method of claim 8 wherein the wet oxidation process is performed at a temperature in a range of about 750 °C to 950 °C.

4. (Previously presented) The method of claim 8 wherein the oxidation process is carried out for a duration in a range of about 20 to about 60 seconds.

5. (Previously presented) The method of claim 8 wherein the ratio of hydrogen to oxygen gases in the mixture is in the range of about 0.1 to about 0.5.

Claims 6-7 (Canceled).

8. (Currently amended) A method of fabricating a semiconductor device comprising:

depositing an oxygen-deficient dielectric film having a dielectric constant of at least about 25 over a semiconductor substrate;

subjecting the dielectric film to a densifying treatment to stabilize said film by heating said semiconductor substrate;

subjecting ~~the~~ said stabilized dielectric film to a wet oxidation with steam process provided by heating a mixture of hydrogen and oxygen gases in a rapid thermal process chamber at a temperature of at least about 450°C, ~~said steam provided~~

~~in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber, wherein the ratio of hydrogen to oxygen gases in the mixture is in the range of about 0.1 to about 0.8, and wherein the dielectric film undergoes wet oxidation with only a mixture of hydrogen and oxygen gases that form steam and wherein the pressure of said rapid thermal process chamber is held at about atmospheric pressure;~~
and

subjecting the dielectric film to a second heat treatment in an ambient comprising a stabilizing gas selected from the group consisting of N₂, O₂, O₃, NO, and N₂O.

Claims 9-10 (Canceled).

11. (Currently amended) The method of claim 8 wherein the wet oxidation is performed at a temperature less than the temperature of said second heat treatment ~~for subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas.~~

12. (Previously presented) The method of claim 8 wherein subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas is performed in the rapid thermal process chamber.

Claims 13-41 (Canceled).

42. (Currently amended) A method of fabricating a semiconductor device comprising:

depositing an oxygen-deficient dielectric film having a dielectric constant of at least about 25 over a semiconductor substrate;

subjecting the dielectric film to a densifying treatment to stabilize said film by heating said semiconductor substrate; and

subjecting the stabilized dielectric film to a wet oxidation with steam process provided by heating a mixture of ~~only~~ hydrogen and oxygen gases in a rapid thermal process chamber at a temperature of at least about 450°C ~~and for a duration which increases the oxygen content of the dielectric film, said steam provided in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber; and~~

~~subjecting the dielectric film to a heat treatment in an ambient comprising a stabilizing gas selected from the group consisting of N₂, O₂, O₃, NO, and N₂O.~~

43. (Canceled).

44. (Currently amended) A method of fabricating a semiconductor device comprising:

depositing an oxygen-deficient dielectric film having a dielectric constant of at least about 25 over a semiconductor substrate;

subjecting the dielectric film to a densifying treatment to stabilize said film by heating said semiconductor substrate;

subjecting the stabilized dielectric film to a wet oxidation with steam process provided by heating a mixture of hydrogen and oxygen gases in a rapid thermal process chamber at a temperature of at least about 450°C ~~and for a duration which increases the oxygen content of the dielectric film, said steam provided in a ratio of at least 0.005 relative to other gases present in the rapid thermal process chamber, wherein~~ said hydrogen and oxygen gases are combined in said rapid thermal process chamber and said rapid thermal process chamber has a pressure of around 1 millitorr; and

subjecting the dielectric film to a second heat treatment in an ambient comprising a stabilizing gas selected from the group consisting of N₂, O₂, O₃, NO, and N₂O.

Claims 45-47 (Canceled).